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Before the
Federal Communications Commission
Washington, DC 20554

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JAN 26 1998

In the Matter of)

The Development of Operational,)
Technical, and Spectrum Require-)
ments for Meeting Federal, State,)
and Local Public Safety Agency)
Communication Requirements)
Through the Year 2010)

Establishment of Rules and)
Requirements for Priority)
Access Service)

WT Docket No. 96-86

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

To: The Commission

REPLY COMMENTS

Kenwood Communications, Inc., (Kenwood) by counsel, hereby submits comments in reply to the Second Notice of Proposed Rulemaking ("2nd NPRM") issued in the captioned proceeding, 62 Fed. R. 60199, and various comments filed in response thereto. Kenwood is a manufacturer of various types of electronic equipment, including those used by public safety agencies in land mobile operations. Accordingly, Kenwood has a keen interest in the outcome of this proceeding insofar as technical standards are promulgated for the development of new equipment and technologies. Therefore, in response to the comments previously submitted, Kenwood replies as follows:

Promoting Affordability of Communications Capability

1. In the 2nd NPRM, the Commission sought comments on its proposal for "the development of a framework to ensure competitive incentives and to ensure that our public safety communications policies are neutral with respect to technologies and manufacturers." *Id.*, ¶25.

2. Given the variety of sizes, budgets, and communications needs of the multitude of public safety agencies across the country, Kenwood agrees with other commenters that standards developed in this proceeding must be sufficiently flexible to allow agencies to meet their individual needs and budgets. This is particularly important as these agencies deal with their individual economic and political realities as they plan the purchase of new equipment to implement the transition to the new system of interoperability envisioned by the Commission.

3. As the Commission recognized, basic economic principles dictate that competition among equipment providers will benefit purchasers by lowering product costs. However, to ensure true competition, all equipment manufacturers must have expeditious access to the technologies necessary to develop compatible equipment. Accordingly, to the extent any proprietary technology is incorporated into the standard ultimately adopted by the Commission, it must be made available, on a fair, reasonable, unbiased, and unrestricted basis, to all participating manufacturers. The determination as to what proprietary technologies contribute to the standard, and in what ways, must be previously defined by the standards committee and must be rigidly applied. Making judgment calls based on *ad hoc* policies adopted in mid-stream would be extremely prejudicial to competing manufacturers.

4. This point is crucial given that digital-related technology and components are not available in the variety and cost as in the consumer electronics market (*e.g.*, cellular, PCS, and computers) where worldwide demand has spurred competition and resulted in large-scale mass production. Accordingly, none but the largest electronics equipment manufacturers (*i.e.*, Motorola and Ericsson) have the ability to subsidize extensive research and development activities for these new technologies.

5. Because the development of a standard will likely involve proprietary technologies for which one or some few equipment manufacturers do or will hold intellectual property rights ("IPRs"), the Commission should provide for publication by the standards committee of a set of license fees, without royalties, together with terms and conditions for use of the technologies. Manufacturers should be required to maintain current lists of such items, together with base quantity pricing information. These lists should of course include technologies employed in existing spectrum use as well as devices and software developed for the new spectrum being allocated. The standards body, or such organization as it appoints (such as TIA), should manage all collection of fees and all distribution of technology information in order to prevent unreasonable or unnecessary delays. Finally, IPR licenses must permit subsequent licensure to independent component and software contractors engaged by manufacturers for mass production purposes.

6. By ensuring fair, impartial access to technologies incorporated in whatever equipment standards are adopted, all manufacturers will be able to expeditiously formulate appropriate business and engineering plans with a high degree of accuracy and certainty. In turn, more products will be brought to market, and the Commission's goal of reducing product costs will be realized.

Equipment Standards

7. The 2nd NPRM asked "whether the Commission should adopt 'receiver standards' to ensure the quality of public safety radio receivers." *Id.* ¶71. As the Commission itself recognized, there is no historical precedent for such an undertaking. Nor is there an objective need for imposing such regulation. Equipment manufacturers already have open market incentives to design equipment which provides optimum receiver performance on parameters

such as adjacent channel selectivity, intermodulation distortion, spurious responses, and sensitivity. Furthermore, public safety licensees will continue to specify their minimum acceptable technical specifications through the traditional bid and contract processes. As more manufacturers enter the marketplace, and more products come on line, buyers will naturally pick and choose the equipment which best meets their performance requirements and budgets. *See* Ericsson Comments at 9.

8. The 2nd NPRM also asked whether, given that mobiles and portables operating on channels in the 821-824/866-869 MHz band must be capable of operating on the five mutual aid channels, all public safety mobile and portable radios operating in the 746-806 and/or 806-824/851-869 MHz bands should be (or could be) rendered capable of operating on all voice and data interoperability channels in the 746-806 MHz band (and whether such a determination depends upon the outcome of the allocation of television channels 63, 64, 68, and 69). *Id.* ¶72. Motorola suggests that the Commission "require installation of the existing mutual aid channels in all 746-806 MHz radios and ... adopt similar open licensing policies for the new 746-806 MHz mutual aid channels, including allowing use of such channels by federal agencies." Motorola Comments at 10. On the other hand, Ericsson recommends against "requir[ing] that the 746-806 MHz band interoperability channels be included in radios which operate in other bands." Ericsson Comments at 10. From a developmental standpoint, Kenwood notes that the frequency allocation issue must be resolved before definite recommendations can be formulated. However, Kenwood also points out that all equipment manufacturers recognize the obvious incentive to provide products which will cover the entire band available to public service licensees (whatever that will be). As noted above, market incentives, not rigid regulations, should determine equipment specifications. *See* Ericsson Comments at 16-17.

9. Indeed, a Commission mandate that equipment must be capable of operating in both bands would actually harm the interests of public safety licensees — at least in the short to intermediate term. While demand and market incentives will naturally induce the development of equipment that will cover both bands, abundant components capable of such operation do not exist at present. A requirement that equipment operate in both bands will therefore result in an immediate lack of multiple vendors offering competitively-priced equipment to the public safety community. Very few manufacturers have the means to immediately develop (or have already developed) discrete or hybrid semi-conductor components which operate in both bands. Accordingly, licensees will be faced with a paucity of available dual-band equipment which will inevitably be priced at above competitive rates.

10. The 2nd NPRM also asked whether, if it is technically feasible to incorporate the 746-806 MHz interoperability channels into the 806-824/851-860 MHz mobile and portable radios, such a requirement should be imposed after one year. *Id.* ¶72. As just noted, off-the-shelf components (especially transmitter power modules) are not yet available to all manufacturers. Accordingly, only a few manufacturers would be able to produce radios meeting such a requirement. The Commission should allow market forces to determine the rate of transition and the overall need for dual-band portables and mobiles.

Technical Standards for Interoperability Spectrum

11. The Commission also asked for comment on the appropriate method for developing technical standards for interoperability channels. 2nd NPRM ¶105. Kenwood agrees that any approach to this issue should involve industry manufacturers and an unbiased standards committee (including APCO and post-PSWAC committee representatives). However, given the very real possibility (based on long-established patterns) that an industry advisory committee

would likely be driven by one or two dominant manufacturers, ultimate ratification of the standard should be left to a "steering committee" representative of all public safety agencies (federal, state, and local). Although formation of such a committee would certainly be a challenge, it would be the only way to actually gauge and receive real-world comment and validation of the standards.

12. As other commenters have noted, the time and energy already spent in adopting the Project 25 standards can likely not be repeated.¹ Accordingly, Kenwood supports adoption of the Project 25 Phase I standards — at least as a starting point. However, as discussed above, Kenwood firmly believes that success will depend on the Commission adopting a concise definition of "contributed technologies" and providing an aggressive mandate that makes these contributed technologies readily available to the market. In addition, the Commission should solicit expert comment from TETRA standards representatives as to the European standard. Since most electronics manufacturers market their products on an international basis, development of a standard which is compatible with the European standards, or which facilitates migration to the European standards, would be advantageous for both buyers and sellers because manufacturers would not have to duplicate research and development efforts and could therefore minimize costs.

13. In its comments, Motorola suggests that it is presently "premature" to implement technology standards given that "no equipment exists with which to interoperate" in the 746-806 MHz band. Motorola Comments at 13-14. Kenwood disagrees. As the Project 25 Steering

¹ Kenwood notes, for the record, that the major obstacles to consensus on Project 25 have arisen due to the fact that one entity controls much of the technology on which the standard is based. If a new standard is to be implemented successfully, all manufacturers must fully contribute to the process.

Committee noted, the Project 25 standard is already in place and can be applied in any frequency band. Furthermore, because new technologies must be developed to exploit this virgin spectrum, this is precisely the right time to impose baseline protocols for interoperability.

14. The Commission seeks comment regarding the maximum authorized bandwidth that should be specified for data, image/HSD, and video. Ericsson states that it "does not believe video is an appropriate use of the 746-806 MHz band due to the fact that it is so spectrum intensive." Ericsson Comments at 17. Rather, Ericsson believes the new spectrum should be allocated mainly for voice use. *Id.* Motorola suggests designating 7 MHz of the new spectrum for integrated voice/data operations and 5 MHz for wide band operations such as imaging and video. The voice/data spectrum would be allocated in building block increments of 6.25 kHz, while the wide band section would utilize 100 kHz building blocks. Motorola Comments at 15.

15. Kenwood notes that practical experience over the years has demonstrated that mixing voice and data communications on the same channel has proven troublesome in the real world. Each causes the other to suffer with regard to throughput and reliability. Accordingly, public safety users generally use separate "dedicated" channels for voice and data communications. In rationing the new spectrum, Kenwood agrees that the Commission should use dedicated channels for data (and image/video) while allowing spectrum use (using "spectrum-on-demand" concepts) for occasional transmission of large amounts of data. The data/video channels should be sufficiently flexible to use such a bandwidth-on-demand approach — even allowing entities from separate regions to combine two wide band channels to meet specific large image transfer requirements.

16. Finally, the Commission requests comments on the scope of any additional standards needed to ensure effective interoperability, and suggestions as to how the standards

should be developed. Both Ericsson and Motorola discuss the need to retain analog FM as a transmission standard — particularly for mutual aid/ interoperability purposes.

17. Kenwood agrees that channels for both conventional FM analog and digital should be reserved. Digital 800 MHz trunked-only systems require more infrastructure to provide coverage for the same amount of territory as would an FM analog system. Given the varied budget and funding constraints faced by the multitude of state, county, and municipal entities across the country, there would be much danger inherent in requiring all licensees to convert to a mandated standard. Allowing flexible means where all agencies can "achieve" some regionally-acceptable level of interoperability with other agencies is desirable. The use of audio cross-patching in infrastructure switches can easily provide the ability for analog and digital channels to be linked together (as has already been successfully accomplished in a variety of situations).

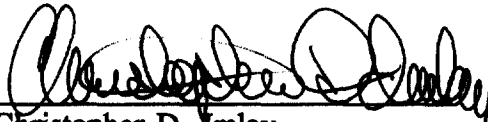
Conclusion

Kenwood Communications, Inc., applauds the Commission for this important step toward meeting the needs of the public safety agencies across the country. In accordance with the many comments submitted in response to the Second Notice of Proposed Rulemaking, and in accordance with the Commission's general trend toward deregulation, Kenwood supports the Commission's general proposals advanced in this proceeding but urges the Commission to remain flexible in adopting standards for the industry. Market forces have heretofore been successful in achieving *de facto* standards with regard to technical protocols and quality of equipment. There is no need to impede that progress by over-regulation.

Respectfully submitted,

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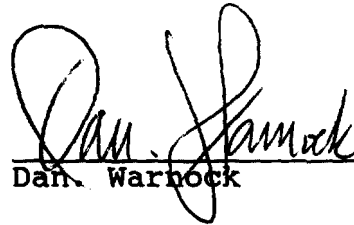
January 26, 1998

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing REPLY COMMENTS was mailed, postage prepaid, this 26th day of January, 1998, to each of the following:

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